

Alun Chalfont on Soviet efforts to have it both ways in space

Red Star Wars: the hidden facts

The Soviet Union, unlike the United States, does not advertise its strategic defence research. Indeed, if it were to do so it would be difficult at the same time to characterize the American programme as "dangerous, destabilizing and provocative".

In 1984, a working group of the Committee of Soviet Scientists for Peace Against the Nuclear Threat published a report which concluded that space-based systems are too expensive, technically unattainable and easily neutralized by counter-measures - arguments now at the heart of the campaign in the West against SDI. Yet in January this year Nikolai Basov of the Soviet Academy of Sciences announced in Moscow that the Soviet Union would have no technological difficulty in matching the American SDI programme.

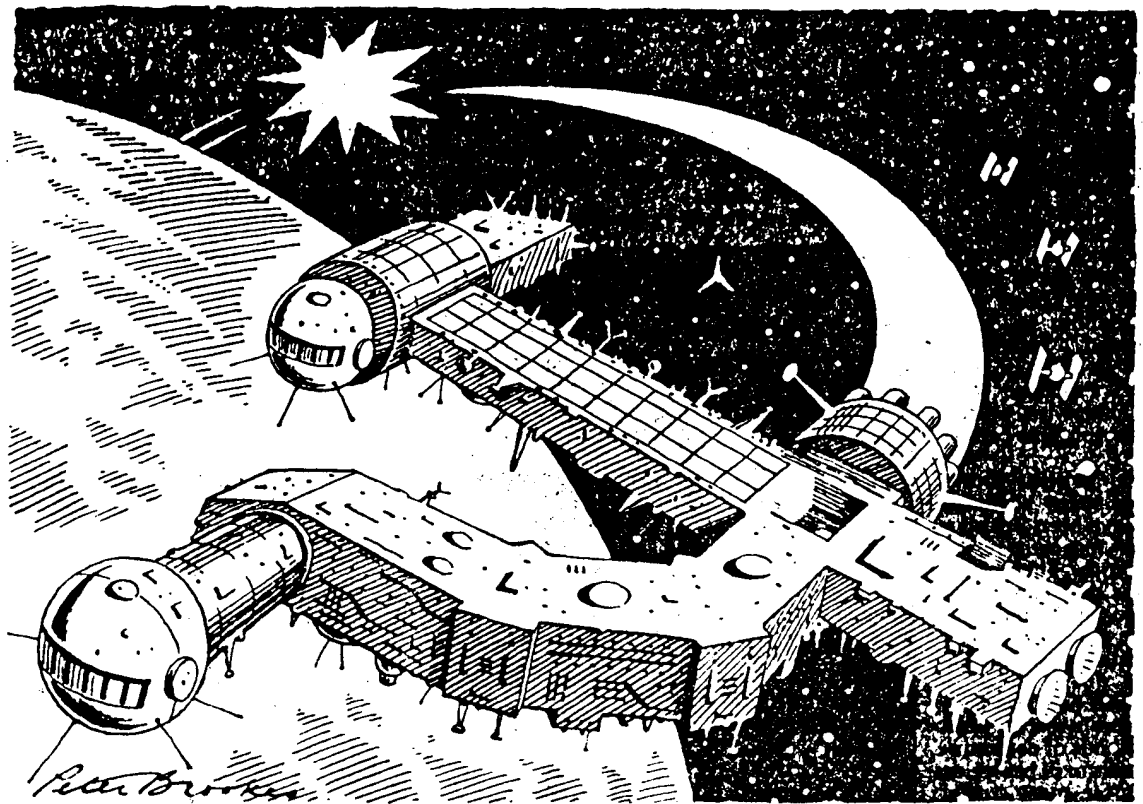
It may be argued that the Soviet Union cannot really have it both ways. Either the SDI is dangerous, provocative and destabilizing, or it is useless, expensive and easily neutralized; either it is technologically unfeasible or it is well within the reach of Soviet military scientists.

On this last point the evidence of Nikolai Basov must be thought to carry some weight. Since he won the Nobel Prize in 1964 for his work in quantum electronics, he has been one of the driving forces behind the Soviet strategic defence programme.

Indeed, what appears to be a baffling contradiction in Soviet attitudes to strategic defence is easily explained if one simple proposition is accepted - namely that the Soviet Union has been engaged for many years on a secret programme of research into space-based defence, and that it now fears that it may be overtaken by a similar programme which has all the weight of western technology, industrial infrastructure and economic resources behind it.

The principal area of technology on which much strategic defence research is concentrated is that known as "directed energy". This includes the laser, an intense beam of electromagnetic radiation aimed at a missile to penetrate its surface and damage its guidance system and warheads; the radio-frequency weapon, involving electromagnetic radiation at wavelengths similar to those of radar, designed to damage the electronic components and circuits of a missile; and particle beams, produced by a high energy accelerator, which can cause not only thermal or mechanical damage, but also secondary nuclear or X-ray effects deep inside the target missile.

Soviet research into laser weapons began as early as the 1960s. It is



conducted by some of the best scientists and engineers in the Soviet Union, including Nikolai Basov and the man who shared the Nobel Prize with him in 1964, Alexander Prokhorov.

For many years western intelligence reports have suggested that the Soviet Union is at least as well advanced as the US, and in some areas well ahead of it, in laser technologies for military application. It already has a ground-tested anti-satellite system (the only one in existence) and, according to some intelligence assessments, could have operational space-based systems before the end of the century. Although Russian research and development has tended to concentrate on laser technologies, impressive progress has also been made with particle beams. Research into nuclear accelerators has obvious applications in normal high-energy physics for peaceful purposes, but equally it has obvious military potential. Similarly, Russian expertise in microwave weapon technology is at least as great as that of the US.

None of this will come as a surprise to any serious student of Soviet strategy. The Soviet Union has never subscribed to the concept of Mutual Assured Destruction. Russian strategists have consistently

emphasized that their planning is based on the calculation that any war between Nato and the Warsaw Pact will inevitably escalate into a nuclear war, which it is their purpose to win. In any case, they know that effective defence is an essential ingredient of a credible deterrent.

It is for these reasons that the Russians have placed far more emphasis than any Nato government on civil defence; that they have protected Moscow with the only existing operational ballistic missile defence system and recently upgraded it; and that they have developed an orbital as well as a ground-based anti-satellite system. Furthermore, they have built large phased-array radar systems, which some western authorities believe to be in contravention of the Anti-Ballistic Missile Treaty, and they have begun to deploy a surface-to-air missile system (the SA X12) which is capable of intercepting some types of western ballistic missiles.

It would have been surprising, therefore, if Soviet scientists and military planners had not carried out serious research into space-based strategic defence systems. They do not, of course, have the kind of political system in which this has to be the subject of a presidential announcement; nor, if it had been

announced, do they have the kind of press which would have been ready to produce "Star Wars" headlines and columns of hostile and derisive comment.

Those who suggest that the United States should abandon its strategic defence research programme in the interests of successful arms control negotiations might do well to ponder one significant aspect of the public debate. Within a month of President Reagan's SDI speech on March 23, 1983, a letter appeared in *The New York Times* attacking the initiative. It was signed by over 200 Soviet scientists - a powerful blast, one might have thought, against the whole idea of strategic defence.

What might have escaped general notice at the time was that many of the signatories including Basov and Prokhorov, have spent their professional lives designing Soviet strategic missile systems, military aircraft and nuclear submarines. The most interesting signature was that of Evgeny Velikhov, vice-president of the Soviet Academy of Sciences and the leading figure in "Star Wars" research in the Soviet Union. Perhaps he should have declared an interest.

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